

**UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY**

**IN RE LG FRONT LOAD WASHING
MACHINE CLASS ACTION
LITIGATION**

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: Honorable Faith S. Hochberg, U.S.D.J.

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: Case No. 2:08-cv-00051-FSH-MAS

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**BRIEF IN SUPPORT OF DEFENDANT LG USA's *DAUBERT* MOTION
TO EXCLUDE INADMISSIBLE EXPERT TESTIMONY FROM
PLAINTIFFS' MOTION FOR CLASS CERTIFICATION**

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INTRODUCTION

Plaintiffs' motion for class certification relies heavily on two proposed experts, mechanical engineer Gary Wilson and biologist/mycologist Chin Yang, who opine that all of the millions of LG-brand front-loading washing machines ("LG FLWs") ever sold in the U.S. are defective. Wilson and Yang assert that all LG FLWs are defective because they build up laundry residue on which mold, mildew, bacteria, and biofilm grow, resulting in an unpleasant odor.

Wilson and Yang reached these opinions after doing almost no work. Before he decided all LG FLWs are defectively designed, Wilson performed just *three hours* of work, disassembling and inspecting three LG FLWs hand-picked for him by Plaintiffs' counsel. Yang concluded that all of them are defective after spending just *10 or 15 minutes* at a store looking at a new LG FLW and then reading the opening reports of LG USA's experts. Wilson's and Yang's methodology is the equivalent of looking at a few cars that have been in front-end collisions, and from them concluding that *all* cars are defective in design because all of them have headlights that do not work. It is a mockery of the scientific method.

Neither Wilson nor Yang conducted any testing at all. Wilson defends his failure to test his hypotheses by insisting that the scientific method is not "necessary" in this case. When asked how much misuse by a customer a properly designed FLW ought to be able to handle, he responded, "I haven't studied that. I mean, that's something that I would have to, heaven forbid, I would have to get into trying to run some kind of experiment to see."

For his part, Yang agrees that testing is important, but still did none. Asked if he wanted to test LG FLWs, Yang testified, "I'd love to." When asked if it was correct that he had *never* "personally inspected, disassembled or taken samples from any LG front-load washer," he responded, "That's correct, but I want to state this. I was never offered [an] opportunity to either."

Yang no doubt wishes he had performed testing in this case because he previously opined, in another case (*Billescas v. AllState*), that testing is *essential* for him to render expert opinions about the presence of biological organisms. In addition, a federal court judge struck Yang's opinions in another case (*Sanchez v. Abbott Labs*) precisely because, like here, he failed to conduct appropriate tests.

In stark contrast to Plaintiffs' experts, LG USA's engineering expert, Dr. Edward Caulfield, conducted *eight months* of controlled testing of LG FLWs using real laundry and a properly screened olfactory panel to test Plaintiffs' allegations. Caulfield's testing showed that when properly installed, used, and maintained in accordance with the owner's manual instructions, LG FLWs do not build up laundry residue and do not develop unpleasant odors. When habitually misused and not maintained, however, they can develop an odor. Caulfield's testing demonstrates the proper approach for a scientific expert.

Because Wilson and Yang did no work and no testing and instead looked at just a few LG FLWs hand-picked by Plaintiffs' counsel, their opinions flunk the reliability requirement under Federal Rule of Evidence 702 and *Daubert*. Their opinions are in fact only testable hypotheses, but they did no testing and applied no other reliable methodology. Instead, on the basis of looking at just a few machines, Wilson and Yang decided that in their personal judgment all of the millions of LG FLWs are defective. But as this Court noted when excluding an expert for failing to provide an reliable methodology for his opinions: "'Judgment' does not substitute for scientific method; without a reliable method, result-oriented 'judgment' cannot be distinguished from scientifically or methodologically-based judgment . . . Absent that, this Court's role as gatekeeper to assess the reliability of the methodology in this case is nullified." *Magistrini v. One Hour Martinizing Dry Cleaning*, 180 F. Supp. 2d 584, 608 (D.N.J. 2002) (Hochberg, J.).

Wilson and Yang also err by offering opinions well outside their purported expertise. For example, Wilson opines on issues of mold, mildew, bacteria, biofilm, and consumer expectations, even though he has no education, training, or experience in those areas and *admits* he is not an expert. Similarly, Yang offers opinions on olfaction (smell), internet surveys of consumers, and mechanical engineering despite having no expertise in those subjects. Without any qualifications to offer these opinions, they should be excluded.

For these reasons and those discussed in detail below, Wilson's and Yang's opinions should be excluded from this Court's consideration of Plaintiffs' motion for class certification.

BACKGROUND

I. Complaint Allegations

Plaintiffs allege that all LG FLWs “have inherent design defects that cause them to (a) accumulate mold, mildew or similar residue within the Washing Machines; (b) produce foul and noxious odor that escapes from the Washing Machines; (c) produce mold, mildew and/or foul odor on clothes washed in the Machines; and (d) be unusable for the ordinary purpose for which the Washing Machines were sold.” (Opp. Ex. 43 ¶ 2.)¹ Plaintiffs contend that “foul odors . . . permeate[] consumers' homes.” (*Id.* ¶ 111.) Plaintiffs also allege that LG FLWs are “unusable for the ordinary purpose for which they were advertised, marketed and sold” and suffer from defects “so basic that they render the Washing Machines unfit for the ordinary purpose of cleaning clothing.” (*Id.* ¶¶ 39, 112.)

¹ All citations to Opp Ex. __ are to the exhibits that accompany LG USA's Opposition to Plaintiffs' motion for class certification. All citations to Ex. __ are to exhibits that accompany this *Daubert* motion.

II. Scope of the Alleged Defect

A. Customer Complaint Data

As explained in LG USA's Opposition to Plaintiffs' motion for class certification, LG USA has sold millions of LG FLWs and received mold or odor complaints about only a tiny percentage of machines.

B. Consumer Survey

To confirm that the customer complaint data reflects consumers' actual experiences, LG USA retained Dr. Thomas Maronick to conduct an internet survey of LG FLW owners. Maronick is a Professor of Marketing who was, for nearly 17 years, the Director of Impact Evaluation in the Bureau of Consumer Protection at the FTC, where he designed and implemented over 300 marketing and consumer surveys. Today he teaches the proper methods and procedures for designing and implementing consumer surveys, including internet-based surveys. (Opp. Ex. 2 at 2; Opp. Ex. 3.)

Maronick's survey showed that ***99 percent of LG FLW owners were very satisfied or satisfied*** with their LG FLWs. (*Id.* 16.) Respondents commented on the LG FLWs' quality ("high quality," "quality is very good!"), efficiency ("detergent use is less," "efficient and energy saver"), and washing ability ("I like the way my clothes look," "effective cleaning"). (*Id.* 12.) The survey found just one owner who had an LG FLW with buildup or odor. (*Id.* 14-15.) That means at the 95 percent confidence level, ***no more than 1.47 percent*** of LG FLW owners can have experienced buildup or odor. (*Id.* 15 & n.6.)

C. Declarations from Happy LG FLW Owners

LG USA also obtained Declarations from 51 happy owners of LG FLWs. (Opp. Ex. 1.) LG USA submitted these Declarations as examples of experiences shared by millions of customers. In each one, the owner explains his or her use of the LG FLW and the fact that (s)he has never noticed

any mold or bad smell in it. All Declarants would recommend the LG FLW to friends.

Some owners, such as Petrow of Massachusetts, reported they “love” their LG FLWs. Zilnicki of New York added, “I love it ... I recommended it to my mother.” LG FLWs were described as “fantastic” (Knight of Florida), “wonderful” (West of California), and “excellent” (Ricci of Florida). Miller of Colorado explained that his LG FLW is “one of the best devices I have ever owned ... I have absolutely no complaints; it’s a great machine.”

III. LG USA’s Experts

Besides Maronick, LG USA relies on two other experts in its opposition to Plaintiffs’ motion for class certification, Edward Caulfield and Charles Wysocki.

A. Dr. Edward Caulfield

To investigate Plaintiffs’ allegations, LG USA retained Edward Caulfield, who holds a bachelor’s degree in mechanical engineering (specializing in machine design) and a Ph.D. in theoretical and applied mechanics. He is a registered Professional Engineer in two states, he has taught at the university level, and his decades of engineering work include design reviews, evaluation, and testing. (Opp. Ex. 4 at 1; Opp. Ex. 5.) Caulfield and his team undertook two investigations: (1) testing LG FLWs, under a variety of conditions, to determine whether and how odor can develop in an LG FLW, and (2) inspecting every Plaintiff’s LG FLW to apply what he learned during the tests.

Caulfield’s tested eight LG FLWs: two run properly (using detergent as recommended on the bottle, and with regular maintenance) and six run improperly (too much detergent, and no regular maintenance). (Opp. Ex. 4 at 13-15.) His “initial testing” comprised 24 weeks of 15 loads of real laundry per week — approximately one year of household use. (*Id.* 14.) A properly screened olfactory panel of eight people evaluated the machines every week. (*Id.* 15-16.)

These initial tests showed that in machines run properly, according to the owner's manual, detergent and other debris did not accumulate, and odors did not occur. (*Id.* 16-20.) The improperly used machines did accumulate buildup, and smelled worse. (*Id.*) Caulfield concluded that improper use and maintenance causes buildup and odors; owners who follow instructions will not have them. (*Id.* 20.) No inherent defect in the LG FLWs caused those problems. (*Id.* 21.)

Caulfield then conducted "recovery testing" on the worst four machines, to see if consumers who experienced a problem could fix it. (*Id.*) The machines remained in regular use, but with proper detergent and maintenance, including regular Tub Clean or hot water cycles, plus a commercial cleaner or bleach. (*Id.*) The olfactory panel continued. This "recovery testing" showed that machines in which bleach was used showed extraordinary reductions in buildup and odor. (*Id.* 22-23.) Caulfield concluded that an owner with a buildup or odor problem can remedy it by taking simple steps at home: proper use, proper maintenance, and hot water or Tub Clean cycles with bleach. (*Id.* 23.)

Caulfield applied this knowledge to Plaintiffs' LG FLWs, inspecting and disassembling all 19 of their LG FLWs in their homes. (*Id.* 24-39.) He learned, first, that 13 of 19 were improperly installed, so as to allow odors to enter from the sewer. (*Id.* 27.) Second, the drum of 17² showed the same buildup Caulfield saw in his tests. (*Id.* 38.) Third, all 19 showed signs of skipped maintenance. (*Id.* 28-39.) Plaintiffs' testimony confirmed these observations: many admitted not reading owner's manuals, not using HE detergent, using too much detergent, improperly using the dispenser, leaving wet laundry in the machine, and not performing maintenance (on 15, no cleaning cycle had ever been run). (*Id.* 25, 28-33, 47.)

² The other two Plaintiffs' LG FLWs, without any notable buildup in the drum, were Burke's and Cook's: machines that do not have a bad odor. (*Id.* 38; Opp. Ex. 19 at 78; Opp. Ex. 20 at 91.)

Caulfield also reviewed and analyzed design changes to LG FLWs over time, including the addition of (1) a gasket drain hole; (2) an antimicrobial gasket; (3) a door spray hose; (4) a magnetic door plunger; (5) Wash/Rinse Optimizer (which adds extra water if it senses too much detergent); (6) Allergiene cycle; (7) Tub Clean cycle; and (8) Tub Clean + cycle. (*Id.* at 40-45.) LG FLWs with these changes are not sealed between washes, do an even better job of draining water, and can use more water, thereby mitigating an owner's misuse and improper maintenance. (*Id.*)

Based on his controlled testing of LG FLWs, inspection and disassembly of all Plaintiffs' LG FLWs, review of Plaintiffs' discovery materials, and analysis of the changing design and different features of LG FLWs over time, Caulfield concluded: (1) LG FLWs have no design defect, (2) individual factors of installation, use, and maintenance determine whether any particular LG FLW has buildup or odor, and (3) there is no reason to believe that Plaintiffs' improper installation, maintenance, and use — and resulting buildup and odor — is shared by all other LG FLW owners. (*Id.* 46-52.)

B. Dr. Charles Wysocki

To explain the inherently subjective and individual nature of smell, LG USA retained Charles Wysocki, who has spent decades studying individual differences in olfaction (smell). Wysocki has a Ph.D. in Psychobiology, he is a member of the Monell Chemical Senses Center (a non-profit scientific institute that researches smell), and he teaches at the University of Pennsylvania. The National Institutes of Health have supported his research into individual differences in odor perception for over 25 years. (Opp. Ex. 7 at 3-6; Opp. Ex. 8.)

Wysocki explains that each person's olfactory abilities and experiences are different. (*Id.* at 12.) Whether a person perceives an odor, whether it is perceived as pleasant or unpleasant, and whether it is perceived as intense, depends on a variety of factors that vary from person to person. (*Id.* 11-26.) It is therefore not possible to generalize about the olfactory experiences of all LG FLW

owners. (*Id.* 2.) Plaintiffs in particular are a group of people who, based on their ages, genders, and other factors, are more likely than the population to be sensitive to odors. (*Id.* 3.) In short, the only way to determine whether a particular individual is personally experiencing an intense unpleasant odor from an LG FLW is to ask the owner. (*Id.* 28.)

IV. Plaintiffs' Experts

A. Dr. Gary Wilson

As support for their class certification arguments, Plaintiffs initially disclosed a single expert, mechanical engineer Gary Wilson, a lecturer at the University of North Carolina and former employee of LG USA competitor Whirlpool. Wilson submitted an opening report on November 16, 2010 and a rebuttal report in response to LG USA's experts on December 30, 2010.

Wilson opines that all LG FLWs are defective in design because they fail to thoroughly rinse the interior of the machine, especially crevices in the back wall of the tub that holds the washing drum. (Opp. Ex. 52 at 4, 9-10.) Detergent residue and other laundry byproducts accumulate there, and mold, mildew, bacteria, and/or biofilm grow on the buildup. (*Id.*) As a result, he asserts that all regularly-used LG FLWs smell badly, within "a matter of months and often only within a few weeks." (*Id.* 9.)

Wilson asserts that all LG FLWs perform in this manner no matter how they are installed, used, and/or maintained. (*Id.* 13-14.) He insists that "the development of the residue build-up and the development of mold and bacteria" must occur "even when the consumer follows all the instructions indicated in the Owner's Manual." (*Id.* 14.) Wilson also insists that the problem can never be fixed, because buildup and mold, mildew, bacteria, and/or biofilm "become intractable resulting in a systemic, persistent problem." (*Id.* 5.)

Although he admits that the design of LG FLWs has evolved over time, Wilson dismisses all design changes as irrelevant because "none of these changes remediates the propensity for these

horizontal axis washers from developing a residue build-up together with development of mold and bacteria.” (*Id.* 13-14.) Wilson contends that LG USA was aware of the alleged defect “at least as early as 2004” but failed to tell consumers. (*Id.* 14.)

B. Dr. Chin Yang

In response to LG USA’s opening expert reports, Plaintiffs disclosed microbiologist Chin Yang, a technical advisor for Prestige EnviroMicrobiology, which provides laboratory testing and consulting services. Yang submitted a rebuttal report on December 30, 2010.

Yang opines that all LG FLWs are defective in design because they trap moisture and organic matter and eventually develop mold, mildew, bacteria and/or biofilm, producing an unpleasant odor. (Opp. Ex. 54 ¶¶ 29-30, 32, 132-133.) Yang asserts that LG FLWs are “designed to be closed after or when not in use,” which “traps moisture and allows it to condensate for an extended period of time, which will ultimately lead to mold, mildew, bacteria, and biofilm.” (*Id.* ¶ 30.) Yang discounts all the various design changes to LG FLWs over the years because those changes “did not impress me as a microbiologist.” (Opp. Ex. 16 at 110.) Based solely on his review of photos of provided by Plaintiffs’ counsel, Yang observed “signs of biofilms, mildew, and fungal growth” in some of Plaintiffs’ machines. (Opp. Ex. 54 ¶¶ 71, 126.)

Yang also criticizes the opinions of LG USA’s experts, Wysocki, Maronick and Caulfield. After giving his negative views on Wysocki’s opinions (*id.* ¶¶ 77-91), Yang derides those opinions as “inconsequential” and asserts that Wysocki “fails to make the case that there are no molds, mildews, biofilms present in the washing machines and no unpleasant odors from the plaintiffs’ washing machines” (*id.* ¶¶ 92, 134), a claim Wysocki never made. Yang also gives his negative views on Maronick’s survey (*id.* ¶¶ 93-100) and argues that Maronick “does not rule out the probabilities that the LG front-load washing machines have problems with growth of bacteria and fungi and formation of biofilm.” (*Id.* ¶¶ 100, 135.)

Non-engineer Yang also criticizes Caulfield's engineering testing as "not properly designed and carried" out. (*Id.* ¶ 136.) Yang objects that six months of initial testing (simulating one year's worth of laundry) and two months of recovery testing were too brief. (*Id.* ¶¶ 104-05, 116.) Yang also oddly faults Caulfield for not "carefully and fully examin[ing] the individual machines of plaintiffs" (*id.* ¶ 122), even though Caulfield and his team disassembled and inspected all 19 of Plaintiffs' LG FLWs, and Yang has never seen a single one of Plaintiffs' machines in person.

LEGAL STANDARD

Plaintiffs' class certification motion relies heavily on Wilson's and Yang's opinions, so this Court must exercise its "gatekeeping" function to determine whether their opinions are admissible. *In re Hydrogen Peroxide*, 552 F.3d 305, 323-24 (3d Cir. 2008) ("HP"). Under Rule 702, there are "three distinct substantive restrictions on the admission of expert testimony: qualifications, reliability, and fit." *Elcock v. Kmart*, 233 F.3d 734, 741 (3d Cir. 2000). Plaintiffs, as the proponents of expert testimony, bear the burden of establishing that the experts' opinions meet each of these requirements by a "preponderance of proof." *Oddi v. Ford Motor*, 234 F.3d 136, 144 (3d Cir. 2000) (quoting *Daubert v. Merrill Dow Pharm.*, 509 U.S. 579, 593 n.19 (1993)). As explained in detail below, Wilson's and Yang's opinions flunk the reliability and qualifications requirements demanded of admissible expert testimony.

ARGUMENT

I. Wilson's and Yang's opinions are unreliable because they are supported by no data, no testing, and no reliable methodology.

One element of the *Daubert* analysis focuses on the reliability of the expert's testimony and whether the expert's opinions are based on "good grounds." *In re Paoli R.R. Yard*, 35 F.3d 717, 742 (3d Cir. 1994). When testifying as to "scientific knowledge," the expert's opinions must be based on the "methods and procedures of science" rather than on "subjective belief or unsupported speculation." *Id.* (quoting *Daubert*, 509 U.S. at 599). Even if qualified, an expert may be barred if

his conclusions are not based on “sound data.” *Montgomery County v. Microvote*, 320 F.3d 440, 448 (3d Cir. 2003). In short, Plaintiffs must show that Wilson’s and Yang’s opinions are the “based on valid reasoning and reliable methodology.” *Oddi*, 234 F.3d at 146. As this Court has explained, Plaintiffs must establish that the opinions are “based on the methods and procedures of science rather than on subjective belief or unsupported speculation; the expert[s] must have good grounds for [their] belief[s].” *Edison Wetlands v. Akzo Nobel Chems.*, 2009 WL 5206280, *2 (D.N.J.) (Hochberg, J.).

A. Wilson lacks a reliable methodology for his extreme opinions that all LG FLWs are defectively designed.

Wilson’s opinions in this case are extreme. He opines that every one of the millions of LG FLWs is defectively designed. (Opp. Ex. 52 at 4, 9-10.) In fact, Wilson believes that *every* FLW *ever* sold in the United States, *regardless of the manufacturer*, is defective. (Opp. Ex. 14 at 68-70.)

Wilson has never designed a front-load washing machine (*id.* 19, 324-325), and before he was retained by Plaintiffs here, he had no experience with LG FLWs. (*Id.* 83.) Because of his lack of previous experience, Wilson’s opinions about LG FLWs are based solely on the work he did in this case. (*Id.* 102-03.)

But Wilson did almost no work. First, he *never* tested any LG FLW. Second, he inspected just a few LG FLWs. Of the 19 LG FLWs owned by Plaintiffs, Wilson disassembled and inspected just one (belonging to Plaintiff Scalise). (*Id.* 107.) Wilson also inspected three other LG FLWs provided to him by Plaintiffs counsel, for a grand total of four. (*Id.* 106-07.) Each of those four machines was hand-picked by Plaintiffs’ counsel and came from someone already known to be unhappy with it. (*Id.* 195.) As a result, Wilson has *never* inspected an LG FLW belonging to a single one of the millions of happy LG FLW owners or a single LG FLW without buildup. (*Id.* 215.) Third, he reviewed photos of nine LG FLWs belonging to Plaintiffs. None of the photos he

reviewed showed the back of the tub, which he believes is the most important place to look. (*Id.* 223.) Wilson has never seen, in person or in photos, nine of the 19 LG FLWs owned by Plaintiffs.

Wilson spent almost no time working on this case before reaching his opinions. His disassembly and inspection of the first three LG FLWs took just three hours. (*Id.* 85-86; Opp. Ex. 15.) After just **three hours** of work, Wilson was “comfortable” writing a report opining that all of the millions of LG FLWs are defectively designed:

Q. [W]ould it have been enough to disassemble and inspect one LG brand front load washing machine in order to conclude that they had all been defectively designed?

A. You know, I could have drawn I think a conclusion at that time, but I wouldn’t have been as comfortable. After – after tearing down three of them, I was ready to write an opinion.

Q. After three, you had full comfort?

A. Right. (Opp. Ex. 14 at 181-82.)

Despite having conducted no tests, Wilson’s opening and rebuttal reports make clear that the “opinions” he offers are in reality testable hypotheses, including his assertions that LG FLWs do not adequately clean or rinse their own tub walls, improper soap usage is not responsible for buildup and odor, and once buildup and odor occur, the problem is intractable and cannot be fixed. (Opp. Ex. 52 at 9-10, 13.) Each of these assertions can be tested, as the scientific method requires, and as Caulfield tested them. But Wilson does not believe that the scientific method governs his work in this case:

Q. Does the scientific method require hypotheses to be tested by experimentation?

A. Generally. Generally.

Q. Have you consistently applied the scientific method in your ... career as an engineer?

A. When I felt it was -- you know, it was necessary. There are cases where – such as this, where you have a design defect that is in every machine and you know the results of that design defect, so -- and then you’ve got a population in the field that is experiencing the problem. (*Id.* at 247.)

Wilson’s opinions are admissible only if based on testing or some other reliable methodology, but he has none. Instead, he reached his opinions based on inspecting just four

machines and photos of fourteen others, all of which Plaintiffs' counsel hand-picked for him from among owners known to be unhappy with their LG FLWs. Wilson admits that he knows *nothing* about how any of the LG FLWs he looked at were installed, used, and/or maintained. (*Id.* 195-96, 212-13.) He did not think those factors relevant, because he had *already* concluded that all LG FLWs were defective:

Q. Did you ask anyone about its installation, use or maintenance?

A. No. No. And the reason I didn't ask those questions is because *I didn't think I needed to*, you know. These -- these -- all of these machines had this design defect in it. All right. And how it's installed may have some influence on it, but *I don't think very much*. The maintenance of the machine, well, maybe could have a slight impact on it. But those -- those things didn't seem relevant, don't -- are not to me relevant because these all have that design problem.

Q. So is it fair to say that the four machines that you disassembled and inspected, you were not interested in the conditions of their installation, use and maintenance?

A. I didn't say -- *I didn't think it was really relevant*. (*Id.* 212-13 (emphasis added).)

Wilson's blind eye toward how the machines were installed, maintained, and used is critical because he concedes that at some point misuse will overcome even a non-defective FLW:

Q. Do you expect a washing machine to be able to self-clean itself if a consumer uses five times the recommended amount of detergent?

A. Well, five times the recommended amount. I'd have to see what that does to the machine. I'm not sure what that would do, what that would do to the machine. I mean, it -- it really -- it really depends, right. I mean, if they're using five times the recommended amount, that's pretty tough.

Q. Well, my question is --

A. But I would have to see. I would have to see what that winds up doing to the machine. I mean, you have to draw -- you have to draw your boundaries somewhere.

Q. I agree with that. Where is the boundary drawn? How much detergent misuse, in your view, is a machine required to be able to handle through self-cleaning?

A. You know, I haven't studied that. *I mean, that's something that I would have to, heaven forbid, I would have to get into trying to run some kind of experiment to see.* (*Id.* 166 (emphasis added).)

Thus, Wilson opines that LG FLW should accommodate non-HE detergent use but only "to a degree." (*Id.* 175.) And he agrees that an LG FLW is not required to accommodate use of things

like dishwashing detergent. (*Id.*) Furthermore, Wilson previously testified that the owner should be blamed for mildew and odor if the owner forgets and leaves wet laundry in the machine for a few days. (Opp. Ex. 59 at 345.)

Even though he agrees that some level of misuse will cause an FLW to experience the alleged defect, Wilson knows nothing about the installation, use, or maintenance of the LG FLWs he inspected. (Opp. Ex. 14 at 195-96, 212-13.) In other words, Wilson did nothing at all to rule out the possibility — in fact, what true scientific testing has demonstrate is actually occurring — that *all* of the LG FLWs he saw were habitually misused and improperly maintained. Indeed, Caulfield’s extensive tests, inspections of all 19 LG FLW’s belonging to Plaintiffs, and review of Plaintiffs’ testimony and discovery responses, showed that improper installation, use, and maintenance results in the problems found in the LG FLWs that Wilson inspected. (Opp. Ex. 4 at 24-35.)

Wilson’s failure to even consider misuse — let alone rule out misuse as a cause for the problems he saw in the few machines he examined — demonstrates the unreliability of his approach and the lack of foundation for his opinions. *Magistrini*, 180 F. Supp. 2d at 610 (Hochberg, J.) (“ultimate expert decision to discount smoking as an alternative cause of Plaintiff’s AML is not based on any reliable method.”). Without any testing and any reliable attempt to rule out alternate causes, Wilson’s opinions are merely assertions of his personal judgment, which courts in this Circuit routinely hold is insufficient under Rule 702 and *Daubert*. *Oddi*, 234 F.3d at 158 (striking expert: opinions were “based on nothing more than [the expert’s] training and years of experience as an engineer... [The expert’s] *ipse dixit* does not withstand *Daubert*’s scrutiny.”); *Calhoun v. Yamaha Motor*, 350 F.3d 316, 322 (3d Cir. 2003) (striking expert: “There [were] no ... demonstrable tests. Lacking support, his testimony was speculative and unreliable” and conclusory statements about an alleged defect were properly excluded); *Viking Yacht v. Composites One*, 615 F. Supp. 2d 327, 335 (D.N.J. 2009) (striking expert: “There is such an analytical gap between ruling

out some, but not all of the known causes, and ruling in a completely untested cause based solely on historical evidence from the industry.”); *Bracco Diagnostics v. Amersham Health*, 627 F. Supp. 2d 384, 442 (D.N.J. 2009) (striking expert: “[The expert] did not take into account numerous, or indeed, most relevant factors as to causation. Thus, his opinion is not reliable.”); *Williams v. U.S. Army Corps of Eng’rs*, 2007 WL 2261559, *5 (D.N.J.) (striking expert: “Plaintiff conceded at oral argument that [the expert] had in fact conducted no testing, but rather formulated his hypotheses based on principles of engineering and his own observations. Given this admission, the need for an in limine evidentiary hearing is eviscerated since [the expert] cannot withstand scrutiny under the *Daubert* factors.”).

Wilson’s defect opinions also are plagued by his reliance on assertions barred by the Federal Rules of Evidence, as explained in LG USA’s Motion to Strike. For example, he argues that design changes made to LG FLWs over time, such as the introduction of the Tub Clean cycle, prove a design defect. (Opp. Ex. 53 at 10.) Rule 407 exists to bar the argument that design changes prove a design defect. *Steyck v. Bell Helicopter*, 295 F.3d 408, 415 (3d Cir. 2002). In addition, one of the four LG FLWs that Wilson disassembled and inspected belongs to a witness previously stricken from this case by this Court.

For all these reasons, Wilson’s opinions are unreliable and should be excluded.

B. Yang has no reliable methodology to support his extreme opinion that every LG FLW develops mold, mildew, bacteria or biofilm.

Yang’s opinions in this case also are extreme. He opines that every LG FLW develops mold, mildew, bacteria, or biofilm (Opp. Ex. 16 at 129); every LG FLW is defective (*id.*); and every FLW he has ever looked at, regardless of manufacturer, is defective. (*Id.* 130-31.) Even for those consumers who have never seen or smelled anything for years, and are happy with their LG FLWs — such as the 51 customers who provided Declarations to LG USA (Opp. Ex. 1) — Yang insists it is “more probable than not” that their LG FLWs are full of mold, mildew, bacteria, biofilm,

and bad odors. (*Id.* 89.) Yang refuses to concede that **any** LG FLW is free from mold, mildew, bacteria, biofilm, or bad odors. (*Id.* 128-29.)

Given that Yang had no exposure to LG FLWs before he was retained as an expert (*id.* 79-82), his opinions about LG FLWs must be based on the work he did in this case. But he did almost nothing. He started work on the case on December 13, 2010 (*id.* 46-47), and he submitted his rebuttal report just 17 days later, on December 30, 2011. (*Id.*) During that period, he worked on the case on nine days, for a total of 39 hours. (*Id.* 48.)

To opine that all of the millions of LG FLWs develop mold, mildew, bacteria, or biofilm and smell badly demands testing. ***Yang did no testing, even though he has opined in previous cases that testing is necessary to confirm the presence of microbial organisms:***

Only proper sampling by a competent consultant, testing performed by a reputable and credible mycologist, as well as expert comparison and interpretation can determine whether interior surfaces are contaminated by fungal spores or not.... Positive visual inspection plus confirmation testing can determine mold growth. However, no visible mold growth by visual inspection and/or by boroscope inspection is inconclusive at best and does not conclude the absence of mold growth.

(Ex. A at 3.) And Yang's opinions have also been stricken by Judge Nancy Atlas of the United States District Court for the Southern District of Texas for failing to conduct adequate testing:

Dr. Yang's opinions are also unreliable and not relevant because they are not based on sufficient facts or data. Dr. Yang did not conduct any testing on the allegedly harmful or defective product.

(Ex. B at 43-44.) Yang admits he would have liked to do testing in this case: "I'd love to" do testing, he says (Opp. Ex. 16. at 170-71), but he did not:

Q. So just to make sure I'm clear. Is it fair to say you have never personally inspected, disassembled or taken samples from any LG front-load washer?

A. That's correct, but I want to state this. I was never offered opportunity to either.

* * *

Q. Did you ever ask to personally inspect, disassemble or take samples from any LG washer, front-load washer?

A. I think I might have, but I don't remember specifically. But my understanding is my involvement was after all of the activity that's been done basically. (*Id.* at 80-81.)

Yang did not test: (1) any samples from any LG FLWs to determine whether all LG FLWs develop mold, mildew, bacteria, or biofilm; (2) the impact of any individual differences in use of LG FLWs on the growth of mold, mildew, bacteria, or biofilm; or (3) any top-loading washing machines to confirm his understanding that they dissipate humidity more effectively than LG FLWs with the door left ajar. (*Id.* at 92-93, 111, 132-33, 170-71.) Yet he offers opinions on all of those subjects.

What's more, Yang did not personally inspect **any** LG FLWs, whether owned by Plaintiffs or anyone else. Instead, he relied entirely on photos of some Plaintiffs' machines, provided by Plaintiffs counsel. (*Id.* 66.) Yang has looked at photographs for just ten of the 19 FLWs belonging to Plaintiffs. And he did not talk to any Plaintiffs or review their discovery responses (*id.* 74-76), so Yang has no idea whether they were installed, used, and/or maintained properly. Nonetheless, based on photos of a tiny sample hand-picked by Plaintiffs' counsel, Yang condemns millions of LG FLWs as defective.

Significantly, Yang admits that photos sometimes can be ambiguous when it comes to mold, mildew, bacteria, and/or biofilm. He agrees that he cannot always tell whether a particular machine has mold, mildew, bacteria, or biofilm based solely on photos. (*Id.* 248.) Indeed, when shown photos at his deposition of a machine he had not previously examined (owned by Plaintiff Cook), Yang could not tell for sure whether the machine had mold, mildew, bacteria, or biofilm. (*Id.* 246-249.)

Yang's defective opinions also are premised on a false assumption, which renders them inherently unreliable. Without citing any evidence or conducting any tests, Yang asserts that "the door [of LG FLWs] is designed to be closed after or when not in use... This traps moisture inside the machine for an extended period of time, which ultimately leads to mold, bacteria biofilm

growth, and unpleasant odors.” (Opp. Ex. 54 ¶ 132.) In fact, some owners leave the door of their LG FLWs ajar in between wash cycles (Opp. Ex. 21 at 126), and in recent years LG FLWs have included a magnetic door plunger that keeps the door partially ajar in between wash cycles. (Opp. Ex. 4 at 44.) Yang’s improper assumptions also render his defect opinions unreliable. *Edison*, 2009 WL 5206280, at *6 (“[T]he expert’s assumptions must still be ‘accompanied by a sufficient factual foundation’ and cannot ignore the ‘real world.’” (quoting *Elcock*, 233 F.3d at 755, 756 n.12)).

II. Wilson and Yang both offer opinions in areas where they have no qualification to serve as an expert witness.

An expert must have “specialized knowledge” in the specific area of the testimony. “[A]t a minimum, a proffered expert witness . . . must possess skill or knowledge greater than the average layman . . .” *Elcock*, 233 F.3d 741 (quoting *Waldorf v. Shuta*, 142 F.3d 601, 625 (3d Cir. 1998)). When an expert’s previous testimony and curriculum vitae show a lack of expertise on a subject, this “seriously undermines the reliability of any testimony that he might offer.” *Willis v. Besam Automated Entrance Sys.*, 2005 WL 2902494, *9 (E.D. Pa.).

Courts routinely bar proposed experts from offering opinions in areas where they lack relevant education, training, or experience. In *Surace v. Caterpillar*, for example, the Third Circuit affirmed the district court’s decision to bar an expert’s opinions based on his lack of qualifications. 111 F.3d 1039, 1055-56 (3d Cir. 1997). Although the proposed expert had an engineering degree and experience, the Third Circuit agreed he lacked the qualifications necessary to opine on habituation (a phenomenon by which a person can become immune to stimuli through exposure). *Id.* 1055. The Third Circuit emphasized that the proposed expert lacked experience designing equipment from a human safety standpoint, had not designed the specific type of alarms at issue in the case, had not participated in any testing or studies of habituation, and had not read any relevant literature. *Id.* 1055-56. Accordingly, the Third Circuit concluded there was no evidence that the

expert “possesses sufficient knowledge of the phenomenon of habituation, either through training or experience to testify as an expert.” *Id.* at 1056.

As another example, in *Diaz v. Johnson Matthey*, Judge Irenas barred a pulmonologist from offering opinions about lung problems allegedly caused by exposure to platinum salts. 893 F. Supp. 358, 372-73 (D.N.J. 1995). Judge Irenas found him “unqualified to testify because he totally lacks experience in treating or diagnosing patients with platinum salt allergy and has at best limited familiarity with the small amount of literature in the field . . .” *Id.* at 373; *Aloe Coal v. Clark Equip.*, 816 F.2d 110, 114 (3d Cir. 1987) (district court abused its discretion by allowing salesman to offer opinions on causation, because he was not an engineer, had no experience designing construction machinery, and had no knowledge or experience in determining the cause of fires).

A. Wilson is a mechanical engineer but offers opinions about (1) mold, mildew, bacteria, biofilm, and consumer expectations.

Wilson is a mechanical engineer. He asserts that all of his opinions are maintained to “to a reasonable degree of mechanical engineering ... certainty.” (Opp. Ex. 52 at 3.)

Wilson lacks the background, education, training, and experience to offer opinions on mold, mildew, bacteria, biofilm, or consumer expectations. His degrees are all in mechanical engineering. (*Id.* 15.) And all of his work experience has been in mechanical engineering. Straight from school, Wilson joined Whirlpool in 1976 and worked there as a mechanical engineer until he resigned in 2001. (*Id.*) Since then, he has worked as a non-tenured lecturer in mechanical engineering. (*Id.*)

Given his lack of background, education, training, and experience with respect to mold, mildew, bacteria, biofilm, and consumer expectations, Wilson testified that he did not consider himself an expert on those subjects:

Q. Do you consider yourself to be an expert in mold or mildew?

A. Not an expert.

Q. Do you consider yourself to be an expert in bacteria?

A. No.

Q. Do you consider yourself to be an expert in biofilm?

A. No.

* * *

Q. ... [I]s it fair to say that you believe that you have some knowledge in the area of consumer decision-making but that you are not an expert?

A. Yes.

Q. Are you an expert in consumer surveys?

A. No. I would say I'm not. (Opp. Ex. 14 at 279-81.)

Moreover, Wilson did no work *in this case* relating to mold, mildew, bacteria, biofilm, or consumer expectations. He spent just *three hours* disassembling and inspecting a handful of LG FLWs before reaching his opinions that all of them are defective. (*Id.* 181-82.) Wilson did not test for the presence of mold, mildew, bacteria, or biofilm in any LG FLW. (*Id.* 281-82.) In fact, he admitted he does not even know how one would test for biofilm. (*Id.* 284-85.) Wilson also testified that he did not review any testing for mold, mildew, bacteria, or biofilm conducted by anyone else before reaching his opinions in this case. (*Id.* 281-82.)

Neither did Wilson do any work relating to consumer expectations. He has never surveyed LG FLW owners to determine whether they are satisfied with their machines or what their expectations are for those machines. (*Id.* 273.) He did not talk to Plaintiffs, read their depositions or interrogatory responses, review any advertising or public statements by LG USA, or read any owner's manual. (*Id.* 104-06, 110-112, 130.) He did not review any of the customer complaint information produced by LG USA, and he does not know anything about the content of those complaints, or their volume or rate. (*Id.* 107-09.)

Despite his utter lack of qualifications and work, Wilson purports to offer expert opinions about mold, mildew, bacteria, and biofilm. For example, Wilson opines:

- “These front load washers ... provide a perfect environment for mold and mildew...” (Opp. Ex. 52 at 4.)

- “Chemical washes may temporally reduce the amount of mold and bacteria, as well as accumulated byproducts of the wash process, the materials and biofilm become intractable resulting in a systemic, persistent problem.” (*Id.* 4-5.)
- “Therefore a build-up of washer byproducts together with the development of colonies of bacteria and mold growing in the humid and moist environment begin to feed and grow on the build-up and eventually produce the foul, sewer-like odor.” (*Id.* 9.)
- “Once the soil byproducts of the washing process collect in locations where water cannot easily rinse out the cavities, then bacteria and mold begin to grow and multiply. Chemical washes may destroy some or even most of the living organisms where it comes into direct contact with them. However, the remaining organisms simply recontaminate and multiply until they produce enough byproducts that the odor reoccurs.” (*Id.* 11.)
- “Once the byproducts from the washing process build up and the bacteria and mold begin to grow, they become intractable. As a result, there is no effective way to permanently or completely eliminate the problem and the resulting odor.” (*Id.* 13.)
- “Front loading washing machines are intended to use less water and energy, and by design have a humid environment with little ventilation. These conditions create a high propensity for the propagation of mold and mildew which can become an intractable situation.” (Opp. Ex. 53 at 4.)
- “It is my opinion that once the debris is trapped in the drain hose it supports the growth of mold and bacteria that develops into a Biofilm. It is my opinion that the mold and bacteria in the drain hose is another point from which foul odors are released.” (*Id.* 6.)
- “The time necessary to grow mold, bacteria, or fungus sufficient to become apparent is unaccounted for by this testing.” (*Id.* 7.)

Wilson also pontificates about the expectations of American consumer:

- “American consumer expectations, habits, and practices are based on decades of using machines that effectively self-clean.” (Opp. Ex. 52 at 13.)
- “The necessity of the Machines to adequately clean themselves of mold and bacterial growth was known or should have been known by LG as an important consideration for consumers in purchasing these machines.” (*Id.* 14.)

Wilson is not qualified to offer expert opinions in any these areas. This Court should exclude his opinions.

B. Yang is a mycologist but offers opinions about olfaction (smell), internet surveys of consumers, and mechanical engineering.

Yang describes himself as a microbiologist with a specialty in mycology (Opp. Ex. 54 ¶ 1), the study of mold and fungi. When summing up his opinions in the penultimate paragraph of his report, Yang notes, “The foregoing opinions expressed in this report are held to a reasonable degree of scientific certainty in the field of microbiology and mycology.” (*Id.* ¶ 138.)

Yang has no background, education, training, or experience in olfaction, internet surveys of consumers, or mechanical engineering. His degrees all relate to biology. (*Id.* ¶ 4.) All of his work experience has been in the area of biology and mycology. (*Id.* ¶¶ 5, 14) And none of his publications are about olfaction, internet surveys, or mechanical engineering. (*Id.* ¶ 4, 16)

At his deposition, Yang agreed that he had no background, education, training or experience in these areas. With respect to mechanical engineering, for example:

Q. Do you have any college degrees in mechanical engineering?

A. No.

Q. Any graduate degrees in mechanical engineering?

A. No.

Q. Have you received any training in the area of mechanical engineering?

A. I had attended seminars, workshops on mechanical system, specific HVAC system, air conditioning system.

Q. Aside from seminars or workshops that you have attended relating to air conditioning or HVAC systems, have you received any training in the area of mechanical engineering?

A. No.

Q. Do you have any experience working as a mechanical engineer?

A. No.

Q. Have you ever taught any courses on mechanical engineering?

A. No. (Opp. Ex. 16 at 22-23.)

Yang gave the same answers to questions relating to olfaction and internet surveys of consumers. (*Id.* 23-24, 34-36.) Accordingly, Yang testified that he does not consider himself an expert on olfaction, internet surveys of consumers, or mechanical engineering. (*Id.* 36-37.)

Yang's complete lack of any qualifications in these areas is particularly striking when he is compared to LG USA's experts Wysocki, Maronick, and Caulfield, each of whom has studied, worked, and taught in these areas for twenty years or more. Yet despite having no education, training, or experience, Yang gives his personal judgments about the work they did. (Opp. Ex. 54 ¶¶ 92, 96, 100, 104, 111, 122, 131, 134, 135, 137.) All of his opinions about olfaction, internet surveys of consumers, and mechanical engineering should be excluded.

CONCLUSION

For these reasons, Wilson's and Yang's opinions should be excluded in their entirety from this Court's consideration of Plaintiffs' motion for class certification.

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